

TITLE

METHOD AND APPARATUS FOR MAKING BRISTLE SUBASSEMBLIES

ABSTRACT

A bristle subassembly made from the continuous method comprising the steps of:

(1) continuously forming a wrap of polymeric filaments by wrapping at least one filament around the axis of at least a three sided mandrel having a moving cable support on each corner running the length of the mandrel on the exterior corner of the mandrel capable of supporting and moving the polymeric filaments of the wrap along the length of the mandrel;

(2) feeding at least one base string outside of the wrap of polymeric filaments to a selected portion of the mandrel as required to form the subassembly, such as the corner or side of the mandrel, while the polymeric filaments of the wrap are being moved the length of the mandrel;

(3) bonding the base string and the polymeric filaments of the wrap together by simultaneously pressing the base string in contact with the filaments of the wrap and applying energy to the base string and the polymeric filaments of the wrap; and

(4) cutting the polymeric filaments of the wrap at a point downstream of where the polymeric filaments of the wrap are bonded with the base string to form at least one bristle subassembly having at least one row of filament segments connected to at least one base string.

Other aspects of this invention are a continuous method of making a bristle subassembly wherein the base string is omitted and the filaments of the wrap are bonded to each other through the use of an energy source, or the use of a polymeric bead to bond the filaments together or use of a solvent or an adhesive to bond the polymeric filaments of the wrap together to form a bristle subassembly.